

DEPARTMENT OF THE NAVY
COMMANDER, NAVAL SURFACE FORCE
UNITED STATES PACIFIC FLEET
2841 RENDOVA RD
SAN DIEGO CALIFORNIA 92155-5490
AND
COMMANDER, NAVAL SURFACE FORCE
UNITED STATES ATLANTIC FLEET
1430 MITSCHER AVENUE
NORFOLK VIRGINIA 23551-2494

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COMNAVSURFPAC/COMNAVSURFLANT INSTRUCTION 8820.1H

Subj: CRUISE MISSILE CERTIFICATION/QUALIFICATION PROGRAM

Ref: (a) OPNAVINST 3600.3A
(b) COMNAVSURFLANTINST 3502.2C/COMNAVSURFPACINST 3502.2D

1. **Purpose.** To specify procedures for certification and tactical qualification of Atlantic and Pacific Fleet Surface Force Ships equipped with cruise missile systems.
2. **Cancellation.** COMNAVSURFLANTINST 8820.1G/COMNAVSURFPACINST 8820.1D.
3. **Revision.** Changes to this instruction are so extensive as to preclude making individual additions, deletions and revisions by paragraph. This instruction must be reviewed in its entirety. Forward recommendations for changes and additions to Commander, Naval Surface Force, U.S. Atlantic Fleet (N6) or Commander, Naval Surface Force, U.S. Pacific Fleet (N8), as appropriate.
4. **Background.** Reference (a) requires Type Commanders (TYCOMs) to establish programs to certify and qualify ships' crews to handle and tactically employ cruise missiles.
5. **Discussion.** This instruction establishes TYCOM cruise missile certification/qualification requirements and prerequisites required by reference (a).

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6. **Action.** All surface force cruise missile equipped ships will complete the cruise missile certification/qualification process following the procedures outlined in this instruction.

7. **Reports.** Cruise Missile Tactical Qualification (CMTQ) reports are assigned Report Control Symbol CMTQ-3601.

R. P. PERRY
Deputy and
Chief of Staff

S. J. BUSCH
Deputy and
Chief of Staff

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CRUISE MISSILE CERTIFICATION/QUALIFICATION PROGRAM

CHAPTER 1

MATERIAL/SAFETY CERTIFICATION

1. **Material/Safety Certification.** The Material/Safety Certification of the cruise missile weapon system is the first step toward achieving full operational certification. The scope of the material certification is listed in reference (a), enclosure (1), paragraph (a). The Material/Safety Certification is the ship's authorization to load and handle weapons, conduct Planned Maintenance System (PMS) maintenance actions, and conduct tactical training. The Material/Safety Certification must be successfully completed before proceeding into the tactical qualification process.

2. **Prerequisites.** Before beginning the material/safety certification process, each ship must possess:

a. A Commanding Officer's qualified conventional ordnance handling team.

b. Minimum manning as prescribed in Appendix A of this instruction.

3. **Initial Material/Safety Certification.** The initial Tomahawk and Harpoon missile material/safety certification assessment is conducted by the In-Service Engineering Agent (ISEA), Naval Surface Warfare Center, Port Hueneme Division (NSWC PHD) with final certification granted by Program Executive Office, Cruise Missiles and Joint Unmanned Aerial Vehicles [PEO (CU)].

Note: Conditions may arise when major system upgrades or significant repair work to cruise missile systems or significant periods of inactivity would require a Material Certification. When deemed necessary by PEO (CU) or TYCOM, extended availability period material safety certification assessments shall be conducted by NSWC PHD in accordance with test plans approved by the PEO (CU). Test plans will include material certification requirements contained in enclosure (1) to reference (a). Subsequent certifications are granted by the Immediate Superior In Command (ISIC).

4. **Material/Safety Certification Continuation.** Circumstances may arise which warrant Material/Safety Certification suspension or revocation.

a. Minimum requirements to continue Material/Safety Certification are as follows:

(1) A full allowance of system maintenance required special tools and test equipment, calibrated and in serviceable working condition.

(2) A complete inventory of current maintenance related technical manuals and other associated documentation.

(3) Manning levels for maintenance personnel as prescribed in Appendix A, Table A-1 of this instruction.

(4) A system maintained free of casualties which might raise reasonable doubt that the system would function in a safe and reliable manner; and

(5) A fully qualified ordnance handling team.

b. Ships unable to satisfy minimum requirements to continue Material/Safety Certification shall immediately suspend cruise missile maintenance actions, operational employment, and training evolutions. Report the Cruise Missile Material/Safety Certification suspension to the ISIC, with an information copy to the TYCOM. ISIC action will include the following as applicable:

(1) Initiate immediate action to correct the discrepancies to restore certification.

(2) Coordinate with the TYCOM, NSWC PHD (4G00), PEO(CU) to correct deficiencies requiring additional resources, (e.g., school graduates, material casualties, safety deficiencies, etc.).

(3) Restrict maintenance operations involving the cruise missile weapon system to only those absolutely essential to maintain system safety. Qualified supervisors and/or

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operators from other than the affected ship's force may be required to assure system safety.

(4) Direct cessation of all cruise missile system tactical training, handling, and employment operations. Notify the TYCOM immediately that material/safety certification is removed or suspended, and provide an estimate of actions required to restore certification.

(5) Direct affected ship to report degraded warfare area readiness as appropriate.

(6) Recommend to the TYCOM appropriate action required to safeguard weapons, including off-loading if considered necessary.

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CHAPTER 2

CRUISE MISSILE TACTICAL TRAINING AND QUALIFICATION

1. **Cruise Missile Tactical Qualification.** The Cruise Missile Tactical Qualification is the TYCOM's program for ISIC implementation authorizing tactical employment of Harpoon and Tomahawk cruise missiles. CMTQ is normally conducted during the Basic Phase of the Inter-Deployment Training Cycle (IDTC). CMTQ is conducted by the ISIC, as Senior Evaluator, with technical assistance from Afloat Training Group (ATG) personnel on an interval not to exceed 24 months.

2. **Cruise Missile Tactical Training.** Afloat Training Group provides cruise missile tactical training for Tomahawk and Harpoon during the basic phase of the notional training cycle in accordance with the Tactical Training Strategy (TTS). The ship's Combat Systems Training Team (CSTT) should be incorporated into the training and qualification phase. During CMTQ, the Cruise Missile watch team will be evaluated.

3. **Scope of Examination**

a. Administration

(1) Manning: Tomahawk and Harpoon proficiency will be demonstrated at Condition (I/II) (CORE/FLEX). Qualified watch teams will be evaluated in the following areas:

(a) Manning in accordance with the required enlisted Navy Enlisted Classification (NEC) personnel and trained officer personnel in accordance with Appendix A of this instruction.

(b) Maintain requisite school graduates per requirements contained in Appendix A.

(c) Have completed the required Personnel Qualification Standards (PQS) or Job Qualification Requirement (JQR).

(d) Have watchstation assignments approved by the Commanding Officer.

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NOTE: Officers may not substitute for required enlisted NEC qualified personnel. Watchstanding requirements are according to Appendix A. Only the TYCOM may waive manning and NEC requirements listed in Appendix A of this instruction. The Cruise Missile watch team personnel for the CMTQ must have Planned Rotation Date (PRD's) at least 3 months beyond the date of the CMTQ. Use of personnel with PRD's less than 3 months from the date of the CMTQ requires a waiver from the TYCOM. Waiver requests will be handled on a case by case basis and should include all actions taken by the ship/ISIC to resolve the issue(s).

(2) Training: Formal training requirements are listed in reference (b) and Appendix A of this instruction. To assist in maintaining knowledge and proficiency of the Condition I/II (Core/Flex) watch team, a recommended reading list is provided in Appendix B. CSTT conduct and administration will be evaluated in accordance with reference (b).

(3) Service/Training Records: Service and training records will be examined to determine qualifications of personnel assigned to operate the cruise missile system.

(4) Ship's Bills/Instructions: The CMTQ Team will review the following ship's bills/instructions:

(a) Battle Orders.

(b) Combat System Techniques and Procedures.

(c) Cruise Missile Doctrine (may be included as part of the Combat System Techniques and Procedures).

(d) Condition (I/II) (CORE/FLEX) watchbill, (including PQS qualification, and PRD's).

(e) Combat System Casualty Control/Combat System Operational Sequencing System (CSOSS) procedures for Surface/Strike Warfare (SUW/STW) systems.

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- (f) Combat System Smooth Log.
- (g) Emissions Control (EMCON) Bill.
- (h) Electronic Warfare (EW) Doctrine.
- (i) Emergency Action Plan (LANT)/Emergency Destruct Bill (PAC).

b. Material Condition: The CMTQ Team will evaluate the safe operational condition of the Tomahawk Weapon Control System, Harpoon Weapon System, and associated equipment. Associated equipment specifically addressed will include the Toxic Gas Vent Damper System, Salvo Warning alarms, and Harpoon Launcher Support Structure. Results will be reported to the ISIC for action as required.

c. Safe Employment: ATG/Combat System Training Group (CSTG), as the TYCOM's agent, will review/approve CMTQ checksheets as required. Using approved check sheets, the CMTQ Team will assess and comment on:

(1) Watchteam members' level of knowledge and tactical proficiency. Watchstanders, as designated in the check sheets, will receive written and/or oral examinations and conduct tactical employment scenarios as part of the qualification.

(2) Effectiveness of combat systems casualty control response and CSOSS procedures.

(3) Effectiveness of communications, command, control and navigation procedures.

(4) Accuracy and efficiency of Data Base Management (DBM), Engagement Planning (EP) and Launch Control (LC) of cruise missiles.

(5) Effectiveness of Over-The-Horizon Targeting (OTH-T) techniques including the use of off-ship sensors and supporting assets and entering organic/non-organic data not automatically processed into the OTH database. Assessment scenarios will include passive sensor data as tipper information in all-sensor coordination efforts.

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4. **Grading.** Following the CMTQ, the Senior Evaluator will assign an evaluation grade of "Pass" or "Fail." Requisite pass/failure criteria are provided in Appendix C (Tomahawk) and Appendix D (Harpoon).

5. **Responsibilities**

a. Commanding Officers shall:

(1) Present a ship ready for CMTQ.

(2) Provide administrative support and work spaces for the CMTQ Team.

(3) Provide the CMTQ Team Leader a copy of the ship's Condition I/II (Core/Flex) Watchbill at the CMTQ Inbrief.

b. ISICs shall:

(1) Coordinate Mission Data Updates (MDU) to ensure that the ship has all missions from the Mission Verification Index (MVI) provided by ATG prior to the CMTQ. The MVI will be given to the ship during the Command Assessment of Readiness and Training (CART) and should be checked for completeness at least one month prior to CMTQ. (For LANT: COMSECONDFLT J354 provides training MDU's on a regular basis and will also provide additional MDU's upon request.) (For PAC: Fleet Combat Training Center Pacific(FCTCPAC) provides training MDU's on a regular basis and will also provide additional MDU's on request.)

(2) Perform duties of Senior Evaluator during the assessment.

(3) Verify the ship's ability to successfully receive and process an MDU via all installed systems (i.e. EHF, TADIIXS, STU III, etc.) prior to CMTQ.

(4) Assign final grade.

c. ATG/CSTG shall:

(1) Perform duties of Tactical/Technical Assessor and CMTQ Team Leader during the CMTQ.

(2) Report findings and recommend final grade to the Senior Evaluator.

6. **Qualification Messages/Letters**

a. The CMTQ Team Leader shall forward appropriate recommendations regarding qualification to the Senior Evaluator. The message or letter shall:

(1) Recommend CMTQ grade assignment of "Pass" or "Fail."

(2) Recommend qualification be granted or withheld.

(3) Provide detailed comment for administrative review results, Safety/Material conditions observed, watch team proficiency, and level of knowledge demonstrated during the assessment.

(4) Specify unsatisfactory areas that require reassessment.

b. The Senior Evaluator shall forward a letter or message to the TYCOM and provide info copy to ATG that qualifies the ship or withholds qualification. The message or letter shall:

(1) Reference the PEO(CU) or ISIC correspondence granting the material/safety certification.

(2) Reference the CMTQ Team letter or message with qualification recommendation.

(3) Issue or withhold final Cruise Missile qualification.

c. If qualification is not granted, include justification, outline corrective actions required, and include a time estimate to attain qualification.

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d. Upon receiving final Cruise Missile qualification from the ISIC, the ship may tactically employ the Cruise Missile Weapon System consistent with operational commander's direction.

APPENDIX A
MANNING/TRAINING REQUIREMENTS

Table A-1
MINIMUM MATERIAL/SAFETY CERTIFICATION MANNING

NEC	TOMAHAWK PB III	ATWCS TCG	AWTCS LCG	HARPOON SWG-1A
FC-1110	2	N/A	N/A	N/A
FC-1332	1	1	1	N/A
FC-1333	N/A	2	N/A	N/A
FC-1334	N/A	N/A	2	N/A
FC-1169	N/A	N/A	N/A	1
GM-0981	2	2	2	N/A
OS-0332	2	N/A	N/A	N/A
Fiber Optic Tech	N/A	1	1	N/A

Note 1: FC-1110 (E-7/9) is a suitable substitute for FC-1332 (minimum material/safety certification manning only)

Table A-2
MINIMUM TACTICAL QUALIFICATION WATCH TEAM

NEC	TOMAHAWK PBIII	ATWCS TCG	AWTCS LCG	HARPOON SWG-1A	NTCS-A/ JMCIS
FC-1110	4	N/A	N/A	N/A	N/A
FC-1332	1	1	1	N/A	N/A
FC-1333	N/A	5	N/A	N/A	N/A
FC-1334	N/A	N/A	5	N/A	N/A
FC-1169	N/A	N/A	N/A	1	N/A
GM-0981	5	5	5	N/A	N/A
OS-0332	2	N/A	N/A	N/A	N/A
OS-0334	N/A	N/A	N/A	2	N/A
OS-0342	N/A	N/A	N/A	N/A	2

Note 1: Harpoon Equipment Room Operator: Two (2) PQS qualified watchstanders. NRF/Reduced Manned ships require one (1) PQS qualified watchstander.

Note 2: FC-1110 is a suitable substitute for OS-0332.

Table A-3
SUW/STW FORMAL TRAINING REQUIREMENTS

CIN/COI	HARPOON	TOMAHAWK
J-113-0133 HARPOON CANISTER HANDLING	12	N/A
J-121-0524 TOMAHAWK WATCH OFFICER (Note 1)	N/A	3
J-2F-4618 CRUISE MISSILE COMMAND COURSE	N/A	CO XO TAO

Note 1: J-121-0524 is an authorized substitute for J-2F-4618.

APPENDIX B
RECOMMENDED SHIPBOARD READING

TOMAHAWK				HARPOON			
CO	TAO	ECO	THAWK	SWC	EVAL	EP/OS	HERO
OPTASKS	OPTASKS	OPTASKS	OPTASKS	OPTASK SUW	OPTASK SUW	OPTASK SUW	
	CM DOCTRINE	CM DOCTRINE	CM DOCTRINE	CM DOCTRINE	CM DOCTRINE	CM DOCTRINE	CM DOCTRINE
	BATTLE ORDERS	BATTLE ORDERS	BATTLE ORDERS	BATTLE ORDERS	BATTLE ORDERS	BATTLE ORDERS	BATTLE ORDERS
	NWP 3-03.1	NWP 3-03.1	NWP 3-03.1				
	NWP 3-03.2	NWP 3-03.2	NWP 3-03.2				
	T2D2	T2D2	T2D2				
	NWP 1-03.40	NWP 1-03.40	NWP 1-03.40		NWP 1-03.40		
	NWP 3-20.71	TTN	TTN	NWP 3-20.71	NWP 3-20.71	NWP 3-20.71	NWP 3-20.71
	NWP 1-10.1	TTA	TTA	NWP 1-10.1	NWP 1-10.1		
		TECH BUL	TECH BUL				
		TCI SOP	TCI SOP	TECH BUL	TECH BUL	TECH BUL	TECH BUL
		8820 SERIES	8820 SERIES				
		OP3594 (Vo19/9A/9B/9C)	OP3594 (Vo19/9A/9B/9C)	OP3594(Vo17/7A)	OP3594(Vo17/7A)	OP3594(Vo17/7A)	OP3594(Vo17/7A)
		OP3594(Vo17/7A)				SOM 10/20	SOM 10/20
			261-20/30				SOM 10/20
			GFCP MANUAL				
			GFCP SITREP				
						AXP-5B	
						EXTAC 322	

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APPENDIX C

TOMAHAWK QUALIFICATION REQUIREMENTS

1. Required elements that constitute the minimum requirements of the Tomahawk cruise missile capability that must be demonstrated for satisfactory completion include, but are not limited to, the following:

a. Demonstrate reliable employment practices based on the approved employment methods contained in applicable directives.

(1) Demonstrate operational proficiency with Launch Sequence Plans (LSP's), Indigo tasking, deviations and reports.

(2) Execute tasking in accordance with established written guidance.

(3) Demonstrate operational proficiency in Officer-in-Charge Tactical Information Exchange System/Tactical Data Information Exchange System (OTCIXS/TADIIXS) operations.

(4) Demonstrate operational proficiency with Tomahawk Inventory Report (TIR) and Mission Verification Index (MVI).

(5) Demonstrate familiarity with Launch Area Coordinator (LAC) responsibilities in accordance with established written directives.

(6) Identify and understand Tomahawk In-Flight Position Reporting System (TIPRS) missiles.

(7) Identify and understand Precision Strike Tomahawk (PST) missions.

(8) Properly respond to casualties as directed by the CMTQ Team Leader.

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(9) Demonstrate correct Communication Security (COMSEC) material handling and data entry procedures for Global Positioning System (GPS) crypto keymat.

b. Maintain a safe environment for the shipboard system and weapons, and the ability to employ the weapons in a safe manner by:

(1) Conducting a proper tactical situation assessment that correctly classifies hostile, neutral and friendly forces.

(2) Generating correct messages, when required.

c. Maintain a secure environment to prevent an unauthorized launch.

(1) Using correct handling procedures for Tomahawk Command Information (TCI) documents.

(2) Ensuring Commanding Officer approval of engagement plans including all revisions.

(3) Managing firing keys and other fire breaks to prevent an unintended or inadvertent launch. An unintended or inadvertent launch is defined as any launch the Commanding Officer has not explicitly approved.

d. Compliance with ship's Cruise Missile Doctrine/Combat System Techniques and Procedures (COMNAVSURFPAC/LANTINST C3516 series).

2. A ship shall be assigned a grade of "Fail" when the above-required elements are not properly demonstrated. Accordingly, failure criteria includes:

a. Inability to manage/update the database, or use the most current information to refine the engagement plan prior to launch.

b. Failure to account for land or shipping in accordance with current directives.

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c. Procedural departure from launch checksheets (CO approved, tailored OP 3594 check sheets).

d. Conducting a simulated launch without Commanding Officer approval of the final version of the engagement plan. A signed engagement plan hard copy is recommended during normal launch sequences. When urgent tasking is implemented (i.e. Call to Fire) on screen approval by the Commanding Officer shall be authorized if specified in the ship's Cruise Missile Doctrine.

e. Failure to develop flight routes that adequately consider and compensate for threat platforms, missile engagement zones, air routes, navigational hazards or booster drop zones.

f. Failure to activate vent dampers/salvo warning alarms prior to each missile launch. DDG-51 class ships may operate the Toxic Gas Vent Damper System during CMTQ scenarios in accordance with appropriate class advisory, however, vent damper operation must be demonstrated during Administrative Review.

g. Failure to assign proper ordnance type and quantity will be evaluated as "Not complying with Indigo tasking" and will be assessed as an "unsuccessful mission."

h. Failure to comply with written directives (i.e. Indigo, LAC Intentions, NWPs, OPTASKs, etc.) or two missed launches constitutes immediate failure.

3. A "Fail" rating will be assigned when the ship fails to correctly demonstrate requirements, meets immediate failure criteria, or, in the view of the senior evaluator, makes a preponderance of errors sufficient in nature that a "Pass" rating cannot be reasonably granted.

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APPENDIX D

HARPOON QUALIFICATION REQUIREMENTS

1. Required elements that constitute the minimum requirements of the Harpoon cruise missile capability that must be demonstrated for satisfactory completion include, but are not limited to, the following:

a. Demonstrate reliable employment practices founded upon the approved employment methods contained in applicable directives to include, but are not limited to, the following:

(1) Maintain an accurate plot of:

(a) Ownship throughout.

(b) Assist ship(s)/Aircraft for Deconfliction.

(c) Active sensor contacts during third party targeting.

(2) Correctly determine threat platform identification and capabilities.

(3) Use correct salvo size per existing doctrine.

(4) Maintain an actively updated, tactically useful, OTH database, including entry of post-engagement results.

(5) Use most current information when refining engagement plans.

(6) Maintain and use tactically effective SUW/SAG checksheets.

(7) Use tactically correct engagement planning operations to include the effects of background shipping, burning hulks, waypoints, and time late on targeting solution.

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(8) Successfully execute Coordinated Designated Time On Top (DTOT).

(9) Demonstrate operational proficiency with Turquoise Tasking, deviations, and After Action reports.

(10) Demonstrate DUD/MISFIRE and Casualty procedures at WCIP, and Harpoon Equipment Room (HER)/Launcher Control Station (LCS).

(11) Demonstrate correct response(s) to any HWS casualty, actual or simulated.

(12) Demonstrate a doctrinally correct tactical casualty launch as directed by CMTQ Team Leader.

b. Maintain a safe environment for the shipboard system, weapons, and the ability to employ the weapons in a safe manner by:

(1) Conducting a proper tactical situation assessment that correctly classifies hostile, neutral and friendly forces.

(2) Taking correct initial actions during an actual or simulated casualty to the Harpoon Weapon System.

(3) Maintaining a secure environment to prevent an unauthorized launch.

(4) Activating vent dampers/salvo warning alarm prior to launch. DDG-51 class ships may operate the Toxic Gas Vent Damper System during CMTQ scenarios in accordance with class advisory, however, vent damper operation must be demonstrated during Administrative Review.

(5) Ensure Commanding Officer's approval of engagement plans including all revisions (conducting a simulated launch without approval of the final version of the engagement plan constitutes immediate CMTQ failure).

(6) Manage firing keys and other fire breaks to prevent an unintended or inadvertent launch. An unintended or

inadvertent launch is defined as any launch not explicitly approved.

c. Ensure compliance with ship's Cruise Missile Doctrine/Combat Systems Techniques and Procedures (COMNAVSURFPAC/LANTINST C3516 series).

2. A "Fail" rating shall be assigned when the above-required elements cannot be properly demonstrated, or the following conditions are met:

a. A lack of basic Weapons Control Interface Panel (WCIP) operation skills.

b. Failure to plot a nearland target on a chart. An engagement shall be considered to be nearland whenever the target Area of Uncertainty (AOU) is within 9 NM of land.

c. Failure to plan/evaluate engagement in accordance with written directives.

d. Inability to manage/update the data base or use the most current information to refine the engagement plan.

e. Failure to account for land/islands or shipping not appearing on the geographic display.

f. Failure to activate vent dampers/salvo warning alarm prior to launch constitutes immediate failure.

g. Failure to successfully engage the correct target; more than one unsuccessful engagement constitutes immediate CMTQ failure.

(1) Missing the correct target constitutes an unsuccessful engagement.

(2) Hitting an incorrect target constitutes an unsuccessful engagement.

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(3) Hitting blue forces constitutes immediate failure.

h. Failure to develop flight routes that adequately consider and compensate for threat platforms, missile engagement zones, air routes, navigational hazards and booster drop zones.

i. Failure to demonstrate correct DUD/MISFIRE procedures.

3. A "Fail" rating will be assigned when the ship fails to correctly demonstrate requirements, meets immediate failure criteria, or in the view of the senior evaluator, makes a preponderance of errors sufficient in nature that a "Pass" rating cannot be reasonably granted.